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07-SB-1	
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October 6, 2008

California Energy Commission
Dockets Office, MS-4
Re: Docket No. 07-SB-1
1516 Ninth Street
Sacramento, CA 95814-5512

Via email: docket@energy.state.ca.us and hard copy to the Energy Commission's Docket Unit.

SUBJECT: Comments Regarding Proposed Changes to SB 1 Guidelines, Docket Number 07-SB-1

Dear Commissioners:

I am writing on behalf of National Semiconductor Corporation headquartered in Santa Clara, California since 1967 employing over 7,300 people worldwide.

National Semiconductor creates high-performance, analog intensive solutions that differentiate customers' products by providing more energy efficiency, precision, portability, better audio and sharper images in electronics systems. National's leading-edge analog portfolio features the world's most popular audio and operational amplifiers, interface technologies, data converters, and power management solutions for applications including cellular handsets, displays, communications infrastructure, and electronics such as medical, automotive, test and measurement devices and renewable energy.

As you know, Senate Bill 1 establishes the following three specific expectations to be met in order to qualify for ratepayer-funded incentives:

- 1) High quality solar energy systems with maximum system performance to promote the highest energy production per ratepayer dollar.
- 2) Optimal system performance during peak periods of demand.
- 3) Appropriate energy efficiency improvements in new and existing homes and commercial structures where solar energy systems are installed.

Specifically, we would like to comment on Appendix 2: Field Verification and Diagnostic Testing of Photovoltaic Systems, Page 64, "**Shade Impact Factor = Factor that accounts for production loss due to shading. The default Shade Impact Factor shall be 2.0. The doubling of shade loss accounts for the disproportionate impact on production due to partial shading on modules and strings. Technologies that can demonstrate effective tolerance to partial shading losses in a system shall be considered by the Energy Commission for a lesser Shade Impact Factor.**", as outlined in the September 29, 2008 presentation during the California Energy Commission (CEC) Renewables Committee Workshop.

Properly accounting for the disproportional impact of shade on photovoltaic energy production and recognition and allocation of shade mitigating technology factors can ensure Senate Bill 1 expectations are fulfilled.

Comments

National Semiconductor commends the recently proposed changes by the CEC to recognize the disproportionate impact of shade on solar energy output and performance and recognize implementing a default Shade Impact Factor of 2.0 is a good starting point. Educating the market place and consumers on the impact of shade is essential to ensuring true performance expectations are met. Accounting properly for the impact of shade will allow the CSI incentive dollars to be used in the most effective way.

Shade produced by trees, power lines, chimneys and vents is a natural impediment in real world installations. New and emerging technologies, such as National's SolarMagic technology, greatly mitigate the impact of shade. These types of technologies can allow each panel in the array to operate at its peak performance regardless of the shading of other panels in the array, and optimizing the energy output of each individual panel in an array.

As presented during the September 29, 2008 workshop (TN48227 09-29-08 Impact of Shading on PV Systems) our studies demonstrate the impact of shade on PV arrays is very disproportionate to the amount of shading encountered, and in most situations results in a shade impact factor significantly higher than "2". Additionally, the data provided validates the ability of technologies such as SolarMagic, to recoup up to 65% of energy output lost due to shade and other non-uniform conditions.

National Semiconductor looks forward to the opportunity to working and partnering with the CEC to ensure the impact of shading is adequately addressed within program incentive calculators, to expand current program eligible equipment listings to include new and future shade mitigating technologies, and implementing the efficiency impacts of these technologies into the incentive calculators planned for release on July 1, 2009.

Thank you very much for your consideration.

Respectfully,

A handwritten signature in black ink, appearing to read 'Ralf Muenster', written in a cursive style.

Ralf Muenster
Director, Strategy & Marketing – Renewable Energy Segment
National Semiconductor Corporation